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WEATHER, p. 2

THU: 54°F | 39°F
Chance showers
FRI: 53°F | 37°F
Partly sunny
SAT: 60°F | 45°F
Sunny

Volume 137, Number 8

Friday, April 7, 2017

Former Sec. of Energy returns to MIT as post-tenure professor

In interview, Moniz discusses bipartisanship, Iran nuclear deal, Rick Perry, and Trump administration

By **Drew Bent**
STAFF REPORTER

Ernest Moniz, a nuclear physicist who served as Secretary of Energy under former President Obama from 2013 to 2017, has returned to MIT to continue his work in tackling energy challenges and nuclear security.

For Moniz, this means returning home: the Massachusetts native started his career as a professor at MIT in 1973. His illustrious career has spanned both academics and government: in the past he was a Founding Director of the MIT Energy Initiative, the head of the Physics Department, and Under Secretary of Energy in Department of Energy (DOE) under former President Clinton.

As a post-tenure professor, a

paid position at MIT, Moniz will spend around half of his time on energy innovation and climate change policy work. The other half will be spent outside MIT as co-chair and CEO of the nonprofit Nuclear Threat Initiative.

Moniz plans to keep busy. His other commitments include serving as a special advisor to MIT President Rafael Reif; being a non-resident senior fellow at Harvard's Belfer Center for Science and International Affairs; writing a book involving his nuclear security experiences; and starting a clean energy non-profit.

On Monday, Moniz sat down for an interview with *The Tech*. Highlights include his views on how he secured a rare unanimous Senate confirmation in 2013, what it was like to co-negotiate the Iran nuclear deal, and the way his approach to

climate and nuclear threats differs from that of Noam Chomsky and others.

Moniz also touched upon the new administration, Rick Perry, and the disconnect he's seeing between agencies.

On getting started in government

The Tech: What interested you about work in government, in comparison to the research you were doing here at MIT?

Moniz: Well, it was advancing the public interest. You find out whether you do or do not have it in your blood. And I've got to say, it's in my blood.

The first step into government was OSTP [Office of Science and

Secretary of Energy, Page 9



DAMIAN BARABONKOV—THE TECH

Prefrosh Shannon Wing, Jeanne Harabedian, Jason Madeano during CPW.

Timeflies to headline SpringFest

Festival will feature talent showcase, comedy show

By **Patrick Wahl**
NEWS EDITOR

Pop duos Timeflies and Frenship will perform at this year's SpringFest, the Undergraduate Association announced Tuesday at its Artist Reveal. Frenship will open the act from 8–9 p.m. April 28 in the Johnson Ice Rink, and Time-

flies, best known for its charting singles "All the Way" and "Once in a While," will headline the concert from 9–11 p.m.

Early-bird tickets for the event will be available until April 18 for \$10, and tickets will be available afterward for \$15.

UA Events member Victoria Petrova '17 said in an interview

with The Tech that the UA sought a change from the hip-hop artists who have performed in recent years, spurred by pop being the favored genre among students who took the UA's SpringFest artist survey.

The UA utilized YouTube performance videos to help it choose

SpringFest, Page 12

IN SHORT

The UA Committee on Education is hosting a meeting to hear students' perspectives on advising Monday, April 10 at 4 p.m.

Chicago Mayor Rahm Emanuel will speak at MIT about making

progress in his city Friday, April 14, 4 p.m. at the Wong Auditorium.

The CPW Academic Expo will take place in Johnson Ice Rink 2–3:30 p.m. today. **The CPW Activities Midway** will be in the same place 1–3 p.m. tomorrow, April 8.

Appeals for Finboard funding allocations for this cycle will be open April 9–16.

Chat with a random anonymous MIT stranger at xoxo.mit.edu.

Send news and tips to news@tech.mit.edu.



ROBERT C. RUSCH—THE TECH

Bernie Sanders calls for a grassroots progressive movement before a full-capacity crowd at Kresge Auditorium.

Sanders criticizes Trump, Kochs, media in Kresge speech

Bernie Sanders, the junior senator of Vermont and Democratic nominee for the 2016 presidential election, spoke at a sold-out Kresge Auditorium Friday, telling a receptive audience that "the future of this country is a progressive, not conservative vision" and asserting that "despair is not an option" in the face of the Trump presidency.

Sanders took the stage in front of a standing ovation and a sea of raised smartphones. In his hour-long talk, the senator did not hesitate to criticize President

Trump, whom he called "a fraud," or the Koch brothers, whom he blamed for playing a major role in the radicalization the Republican Party.

"What am I supposed to say to people like that?" he said. Replying to an audience question on working with political opponents, he continued, "What's the compromise? You tell me."

At the same time, Sanders urged liberals to "seek common ground" with individual Trump supporters. Everyone wants health care for their family, he

said, adding that "it's not good enough to laugh with friends about how [Trump is] a jerk." Instead, those who oppose Trump should emphasize to his supporters his failure to uphold his campaign promises.

Sanders also criticized the media for not being "interested in real issues," such as conflicts on American Indian reservations.

Sanders did not address a potential second presidential run in 2020, but did spend about a

Sanders, Page 12

STUDENT STRUGGLES SET TO MUSIC

MIT sophomore publishes an album. **ARTS, p. 14**

LETTERS TO THE EDITOR

New House seniors are being forced to move out early. MIT Medical offers resources to families of grad students. **OPINION, p. 4**



MEET THE PREFROSH

The CPW weather machine fails again, but prefrosh arrive undaunted. **PHOTO, p. 10**

SOFTBALL PRESEVERES

Another successful season is in the works. **SPORTS, p. 16**

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Nunes to step aside from House Russia investigation

By **Emmarie Huetteman**
and **Mark Mazzetti**
THE NEW YORK TIMES

WASHINGTON — Rep. Devin Nunes, the embattled California Republican who is chairman of the House Intelligence Committee, announced Thursday he would step aside from leading his committee’s investigation into Russia’s efforts to disrupt last year’s presidential election.

His announcement was made on the same morning that the House Committee on Ethics said Nunes was under investigation because of public reports that “may have made unauthorized disclosures of classified information.”

The congressman has been under growing criticism for his han-

dling of the Russian inquiry. Many on Capitol Hill have said he is too eager to do the White House’s bidding and cannot be an impartial investigator into questions about any role President Donald Trump’s associates may have had in last year’s Russian campaign to disrupt the election.

Nunes said that his decision came after “left-wing activist groups” filed accusations against him with the Office of Congressional Ethics. He called the charges “entirely false and politically motivated,” but said it was in the committee’s best interests for him to temporarily step aside from the investigation.

Nunes came under fire last month after he announced that he believed Trump or members of

his transition team may have been “incidentally” caught up in foreign surveillance by U.S. spy agencies. He cited “dozens” of intelligence reports he described as classified, which The New York Times later revealed had been provided to him by White House officials.

As the House investigation has deteriorated into partisan feuding, many have turned to the Senate Intelligence Committee as Congress’ last best hope for an impartial congressional investigation into Russian interference in the election.

Since late July, the FBI has been conducting its own counterintelligence investigation into Russian interference in the election, including an examination of whether Trump’s associates cooperated with Russian officials to influence the race.

Close to half of U.S. adults infected with HPV, study finds

More than 42 percent of Americans between the ages of 18 and 59 are infected with genital human papillomavirus, according to the first survey to look at the prevalence of the virus in the adult population.

The report, published Thursday by the National Center for Health Statistics, found that high-risk strains of the virus — a cause of cervical and vaginal cancers, and cancer of the penis, as well as cancers of the anus and throat in both sexes — infect 25.1 percent of men and 20.4 percent of women.

The virus is transmitted by skin to skin contact; people who are infected may pass the virus to sexual partners.

There are more than a hundred strains of this virus, and 40 of them are sexually transmitted. The body usually manages to rid itself of HPV, but for unclear reasons the infection can become chronic in certain individuals.

Two vaccines are effective in preventing sexually transmitted HPV infection, and the researchers stressed that they should be used far more often.

Men generally have somewhat higher rates than women, but among Asian and Hispanic men, the infections are not significantly more common. The reasons for these variations are not known.

—Nicholas Bakalar, *The New York Times*

Bomb defused in raid in St. Petersburg, days after metro attack

ST. PETERSBURG, Russia — Russian security services disarmed an explosive device and detained eight people on Thursday in connection with a suicide attack on a metro train that killed 13 people on Monday.

The investigative committee, which is leading an inquiry into the bombing, said in a statement that six men were detained in St. Petersburg and two in Moscow. It said the explosive device, found in an apartment in St. Petersburg, was identical to the one the suicide bomber, Akbarzhon A. Dzhililov, planted at the Vosstaniya Square station before he blew himself up between the Sennaya Square and the Technology Institute stations. The bomb at the Vosstaniya Square station was disarmed by a security officer before it could detonate.

Despite the arrests, it remains unclear whether Dzhililov acted alone or as part of a wider network of militants.

Investigators discovered tinfoil, double-sided tape and other components of explosive devices in an apartment Dzhililov rented in northeastern St. Petersburg, but there has been little to explain what turned a 22-year-old Russian with Uzbek roots into a suicide bomber.

—Ivan Nechepurenko, *The New York Times*

Hamas hangs three men in Gaza accused of aiding Israel

By **Ian Fisher**
and **Majd Al Waheidi**
THE NEW YORK TIMES

JERUSALEM — The Hamas militant movement on Thursday hanged three men it accused of collaborating with Israeli authorities, during a broader crackdown in the Gaza Strip after the assassination of one of the group’s top military leaders.

The three executed men were not said to be involved in the killing of the Hamas commander, Mazen Fugaha, who was shot four times at close range in his car late last month. But

Hamas has blamed Israel, and the executions were viewed as a warning against cooperating with Israelis.

Since Hamas took control of the Gaza Strip in 2007, it has executed 25 people through its judicial system.

The group also praised but did not take responsibility for the death on Thursday of an Israeli soldier, Sgt. Elchay Teharlev, 20, who was rammed by a car while waiting at a bus stop near the Israeli settlement of Ofra in the occupied West Bank. A second soldier was wounded in the attack.

Nearly 40 Israelis — numbers

vary — have been killed in a wave of attacks by Palestinians, mostly vehicle rammings and stabbings, since 2015. Though attacks happen frequently — there were two in Jerusalem’s Old City in recent days, resulting in the death of a Palestinian man accused of being an assailant — Thursday’s death was the first of an Israeli in an attack since January.

Over the same time period since 2015, Palestinian officials report that more than 250 Palestinians were killed in violence — most, according to Israel, while carrying out attacks or attempting to.

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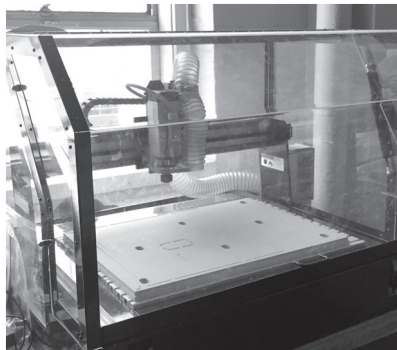


Freshman

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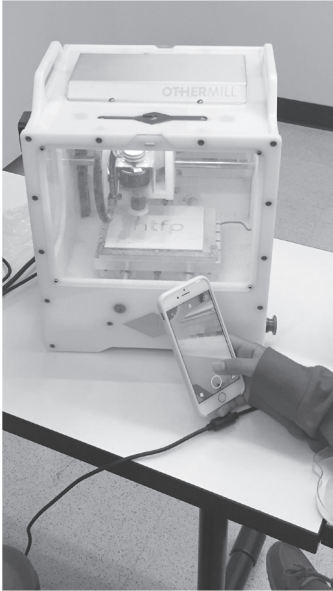
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TECH TRANSFERS

Ahmed Ghoniem

Immigrant members of the MIT community

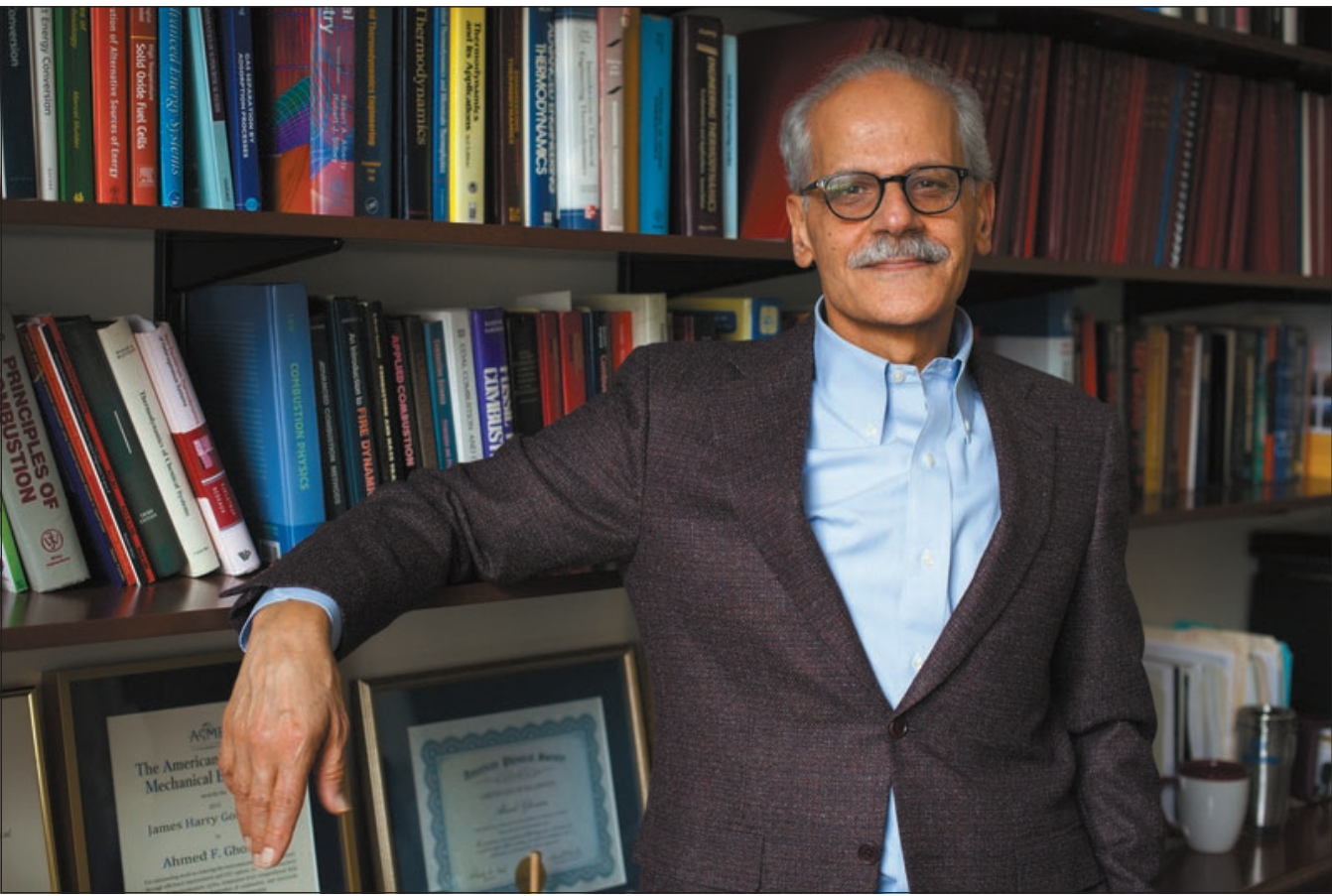
I grew up in Egypt. After finishing my bachelor's and master's degrees at Cairo University, I joined the University of California, Berkeley to do my PhD. While considering different options for the couple of years after getting my degree, it was hard to resist the opportunity of trying out MIT. It was not easy leaving California, and even harder not going back to Cairo, but I felt very much at home in Cambridge, especially after meeting [my wife] Elizabeth and finding my life partner.

Over the years, my research and teaching branched out from computational engineering to combustion, propulsion and control, energy systems, CO2 capture and reuse, and renewable energy technologies. I very much enjoy teaching and my classroom experience, working with exceptional graduate students from all over the world, disseminating our research results domestically and internationally, and being part of an amazing community.

We are living in interesting times when we must become activists in our chosen domains while resisting distractions. I plan to continue to build bridges, locally and globally, work on environmentally responsible technologies, and uphold universal values. For me, this is the American way.

Ahmed F. Ghoniem is the Ronald C. Crane (1972) Professor of Mechanical Engineering, the Director of the Center for Energy and Propulsion Research, and the Director of the Reacting Gas Dynamics Laboratory.

Editor's note: Tech Transfers is a photo series by Professor Daniel Jackson that features immigrant members of MIT.



Ahmed Ghoniem, the Ronald C. Crane (1972) Professor of Mechanical Engineering.

COURTESY OF DANIEL JACKSON

A MISTI SUMMER

Leaving the MIT whirlwind

Learning to slow down in France and Morocco

By Katherine Young

My first two years of college, I found myself getting caught up in a flurry of so many obligations and classes that I couldn't even remember how many organizations I was a part of. Everyone seemed to be doing so much; why shouldn't I? Each break from MIT was a time to reset, but once I returned to campus, the whirlwind picked up again, leaving me burned out.

Coming back from my MISTI France internship last August, I didn't want to leave Europe. How could I leave that idyllic lifestyle, with the perfect location, a compelling project, managers I looked up to, and amazing friends? I justified my departure by telling myself, "I don't belong here; I belong on the other side of the ocean." In other words, it was time to go back to "real life."

What did that mean to me? Real life

meant America, MIT, violin, 6.005, hectic schedules, everything I was used to. I remember feeling guilty for not challenging myself technically that summer — I didn't study for technical interviews, barely worked on a personal project, and spent a lot of time working on the business side for my company. I felt, perhaps wrongly, like it was one of my least productive summers, but maybe the point was to learn things outside of the technical realm. As my fellow intern told me, "You can't work 12 months out of the year."

I came back to the "real life" I was just describing, but this time there was a key difference: I didn't succumb to the external pressure of taking on too much. As my friend who went through a similar realization put it, "I don't have to be the freaky president of every club I'm in!" Thus, I turned many club commitments, such as my absurd number of dorm government

positions, into open pursuits that I could do on my own time: I practiced a different language, ran around Boston, played music with friends, and went to Bible studies. I had internalized the French mode of *la tranquillité* — peacefulness — and didn't let that pressure unique to MIT touch me. Despite it being my junior fall, last semester was my easiest one here. I am no longer in the bubble.

That wasn't my last MISTI experience, however. I just spent a month teaching math and programming to high schoolers in Marrakech through Global Teaching Labs (GTL) Morocco. My main goal was to instill critical thinking and a can-do attitude for problem-solving. Was it exciting? Yes, especially when one of my students solved a 6.006 pset problem immediately, despite not knowing what an algorithm was 30 minutes prior. Was it challenging? Yes, at times, when despite yelling at the

top of my lungs for everyone to quiet down, I couldn't even hear my own voice. During those four weeks, my students wrote their first computer programs, made their first data visualizations, and discovered the many magical utilities of graph theory.

This time, on the plane back to Boston, I tried to compare this MISTI experience to my last one. My awareness went further than it had last summer: I realized that what I was coming back to didn't have to be what I thought of as my "real life." Who's to say that "real life" can't exist outside of MIT, or even America? While trying to get my students to question everything, I realized I hadn't been doing that myself. The act of inquiry applies not only to science and math, but also to life. This is probably what they mean by learning from your students.

Katherine Young is a member of the class of 2018.





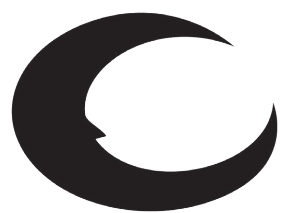




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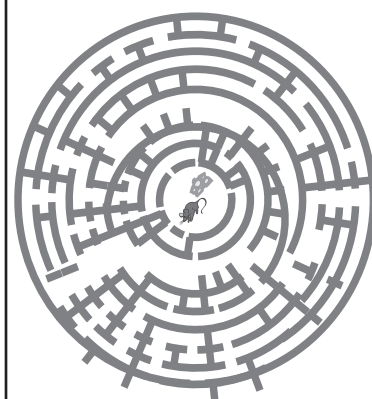
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EVENT

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April 7, 2-3:30pm
Hayden Library, 14S-100



Secretary Moniz talks tackling climate change at a local level

Secretary of Energy, from Page 1

Technology Policy], and that was only for about 15 months after I got confirmed. I told them directly that I would only serve [as Associate Director of Science] to the end of the first term, and then for the second term they should go find somebody else. And I was true to that. I was confirmed in October '95 and stayed until January '97. I left, and my view was at that time, that was it. I did my government service.

I came back to MIT, resuming my position as head of the Physics Department. But then I was only back two months, and I got a call about the Under Secretary job at DOE. And you think about it, DOE and its missions of being, in many ways, the key part of the foundation for physical sciences in the United States, energy (clean energy, technology and policy), and nuclear security — all three areas that I had worked in. The opportunity just suddenly appeared ... I think the response was, “Oh what the hell, I'll do it.” And so it happened.

I want to make it clear: this was all rather serendipitous and none of this was seeking the positions. It's something I think is important for students. In my view, if something interesting comes along, don't be overly conservative. “What the hell” is a good attitude.

On bipartisanship
The Tech: Let's fast forward to 2013 when you were appointed and confirmed as Secretary of Energy. In an increasingly partisan environment, you had a unanimous confirmation in the Senate. How do you think you were able to reach both sides of the aisle?

Moniz: I think the issue of bipartisanship involves a number of things. A very important one — to be quite frank about it — is a bit of the MIT pedigree and the approach of being fact-based, analytically-based, and candid. In fact, Senator [Lisa] Murkowski from Alaska, the chair of the of the Energy and Natural Resources Committee, my confirmation committee, said in her opening statement publicly: You have a reputation, and I've seen it, of being very candid, and we like that. That's part of it: not trying to twist everything into some kind of political message. Sometimes it's uncomfortable in that it may not fully align with the political message, but if it's based upon facts and analysis, well that's what I did.

Secondly important is: God gave you one mouth and two ears for a reason, as opposed to the reverse. So you should use all of those instruments in that proportion.

It's very important to listen and understand the positions, whether they're Democrats or Republicans. It doesn't mean you respond in ways necessarily that they like, but it really helps so that you can understand where they're coming from, and where you might be able to find compromise.

Third, I am a person who prefers pragmatic steps and compromise, rather than some kind of purity which doesn't get you anywhere. Of course, those pragmatic steps only work when in fact there are partners to do that, and I certainly found that was the case with the Department of Energy.

Fourth, there's an art to it as well. The art goes back to talking and listening, but the art is in developing relationships. Politics is about relationships, in the end. Trust. If you have the trust of a member, and vice versa, you can get a lot done even if it's not public, because people understand you're good to your word.

That means not going to visit a member just when you have a problem. It means establishing a relationship so that when you have a problem, you can do that. That is time consuming, and frankly, some people just don't like to do it, and some denigrate it. I think just the opposite. I think it's the job. And to establish relationships early on, that required going up to Congress very

often, for example. Sometimes just having a social occasion. But those all pay off in building trust and building relationships.

So, it's everything from that back to the scientific approach — fact-based, analytically-based. Putting that together as a package ... well I think the results were there to see.

The Tech: On the Iran nuclear deal, do you mind talking a little about what it was like to be the number two negotiator and also negotiating with another MIT alum?

Moniz: What does number two mean?

The Tech: I don't know. It means pretty high up there.

Moniz: It's called a co-negotiator.

The Tech: Co-negotiator, OK! I was saying that from *The New York Times* headline, but they were wrong. Sorry about that.

Moniz: Well, look, just to make it clear, DOE was always involved. Our labs were the ones who were providing all of the technical, analytical work — that also came out in a New York Times article. We had seven laboratories and two nuclear sites that were essentially the support team in, what I would call, the traditional role of DOE — supporting negotiation as appropriately led by the Department of State.

But in this negotiation, which one way or another had to roll back the Iranian nuclear program very substantially, it turned out not much has been accomplished up to February 2015. There was a pause in Iran's program as part of the negotiation, but nothing in terms of a final agreement had come together. Until in a very unusual arrangement, [MIT alumnus Ali Akbar] Salehi on their side, and me on our side, were put in to negotiate the nuclear issue.

The Tech: As co-negotiators.

Moniz: Yeah, so we had these two tracks then going on: [Secretary of State John] Kerry and [Foreign Minister Javad] Zarif negotiating the political, economic parts, and we negotiated the nuclear parts. On both sides, we were quite close together. Kerry and I already had a relationship, but we got very close. The last phone call I just had before you came in was from John Kerry ... and it did not deal with Iran.

It took this unusual negotiating arrangement to move forward. And on the flip side, I might say in retrospect, it seemed like an awfully long time that we were negotiating. The last session was 19 days straight. Pretty unusual of itself. But the reality is that it was from the middle of February to the middle of July: only five months and the entire nuclear thing came together after years and years of really not getting anywhere.

Once again, it was a relationship, trust. We had very different agendas. But our common MIT background, as you were referring to, really was a big deal. It allowed us to very rapidly develop a feeling of trust.

Again, trust is never to be equated with agreement. It's just that we had trust in our being honest with each other. Direct.

And once we did a good MIT analysis of what we each really needed in the negotiation, pretty early on — I mean this was probably not a typical way diplomats negotiate — we kind of mapped it out, and we realized that there were not fundamental conflicts between our key issues, so that a solution should exist. And then we just started to work out the solution, and piece after piece we found compromises, trade-offs, here and there. It was really quite interesting.

That was July 14, the final agreement. Then came a period until Jan. 16, 2016, which was called implementation day. In other words, on Jan. 16, the IAEA [International Atomic Energy Agency] declared Iran had taken all the necessary steps in rolling back its nuclear program.

Yet, none of these things are on autopilot. One of the things that we did, which was a bit of a political risk — to put it mildly — is that on behalf

of the Department of Energy, I basically said we would buy 32 tons of heavy water to get them under the limit on heavy water. We had a good reason: frankly, we ended up having a really cheap solution to upgrading the intensity of the neutron spallation source in Oak Ridge [National Laboratory] by 20 percent with some of this heavy water.

Talking about how pieces have to fit in and trust comes in, I might note that the chairman of the Senate Foreign Relations Committee is from Tennessee, and we took it to a laboratory in Tennessee. Senator [Bob] Corker and we had a phone conversation, and I explicitly told him what was happening, and he understood. It caused some political issues, but it was manageable because we had trust and communications.

Then came Jan. 16, 2016 to Jan. 20, 2017, and we got through that year with IAEA giving passing reports every quarter. And again, it was still an ongoing negotiation to see how the implementation goes forward.

It's going to be key now to see as this administration gains its footing, as Iran goes to a presidential election next month ... it will remain then to see who is in place in Iran, and who on both sides will be able to carry on that discussion. Right now, things are kind of on hold, I think, until they have their election, and then we'll see.

On his plans going forward
The Tech: Your title is now post-tenure professor here, and for a lot of students, we don't know what that means exactly. Can you talk about you see as your involvement with MIT? I know you are involved with many things with the nonprofit, with Harvard, and as a special advisor to the [MIT] president.

Moniz: Well, first of all, if you didn't see, I've now been named the co-chair and CEO of Nuclear Threat Initiative.

The Tech: That's separate from MIT, right?

Moniz: Yes. That's like a half-time position. It was understood when I came back [to MIT] that was likely to happen, and now it's happened. I'll pick up the position in June.

My plan remains that, roughly speaking, half my time will be one way or another on energy innovation, climate change, and half my time will be on nuclear security.

I'm also looking with some colleagues at establishing an independent organization to do a variety of work in the energy innovation arena. Things that I feel I can do better outside of MIT, well, outside of any other organization.

So, those are kind of the three pieces.

On his pragmatic approach to nuclear and environmental threats
The Tech: I recently attended this talk by Noam Chomsky on what he thinks are our two existential threats — environmental and nuclear — which is exactly what your work has been on.

Moniz [jokingly]: I'm a full-threat guy.

The Tech: And I think for a lot of students who went to that talk, and heard it...it was almost apocalyptic. It was not encouraging to hear the outlook, and there was a lack of a sense of agency. I'm wondering what kind of advice you would give to students or faculty here who want to work in these two areas — ways they can feel like they're going to help our world in the future.

Moniz: Well certainly, particularly with regard to the nuclear security side, I think that for obvious reasons, there really is not enough awareness among young people and millennials. That's not so much a critique of young people and millennials.

If you're 25, 30, or 35 years old, you didn't grow up in the [height of the Cold War]. There was no issue. Nobody talked about it, other than the kind of the inside baseball of “let's get this stuff cleaned up, reduce the number of weapons, get these materials under control or eliminated.” But suddenly now — there's

no doubt about it, we made a lot of progress on many issues — but in some ways the problem has gotten worse in the last years.

A lot of people feel that the risk of a major nuclear war — let's say between the United States and Russia with the two biggest arsenals — that risk is probably greatly diminished.

And yet the risk of a nuclear weapon being used again is probably higher, with many different issues. You've got India and Pakistan, you have North Korea. It's gotten really complicated.

The Tech: Is this your belief as well?

Moniz: I think that's true. I think the risks are greater of that as opposed to the old idea of 10,000 missiles going back and forth. I'm not saying that the issues are only India, Pakistan, North Korea. There are issues with Russian developments. All across the board.

So, the issue of getting more young people now tuned into these issues and ready to contribute in the next 10, 20, and 30 years is in fact very critical. Whether it's [former Secretary of Defense] Bill Perry's book or Chomsky's lecture, certainly having young people attuned to this is very important.

It is important that there are those who are giving the clarion call about the major risks posed in both arenas.

On the other hand, we also need people — and frankly I am personally in the group — who are always looking for practical steps to take that go in the right direction. We have to understand what we think is the right direction, what the problem is ... and I don't think any less than Chomsky, Perry, [Bill] McKibben, Al Gore...

The Tech: Jerry Brown.

Moniz: Jerry Brown. I'm on the same page with all of them in terms of the importance of both of those problems, but in the end I'm the kind of a person who thinks a long range plan is a bunch of short range plans put together that all go in the same direction.

You've got to take steps. You've got to build confidence. Certainly in the nuclear regime, that's critical. In the climate change regime — maybe it's because of where I sit and where I come from — but getting this innovation agenda to move forward, step by step, in the United States and elsewhere, continuing innovation and cost reduction of the technologies we see around us, is absolutely critical to reach the Paris climate goals in the 2025, 2030 timeframe.

I didn't say they're major, whole new Grand Slams — just that keeping at that agenda is very important, the way we have seen it in solar cost reduction, wind cost reduction, etcetera. Storage cost reduction, we're still not there, but that's coming down nicely.

However, in my view, the Paris goals are a critical, important step towards much more ambitious goals in the mid-century time. The next generation from the Paris goals is where the progress has to be, if anything, accelerated. For that, we need dramatic innovation to go forward and that's the kind of the agenda that I personally want to try to advance.

On tackling climate change at the local level
Moniz: When we come to the United States — an area that I'm again very interested in and will be focusing on — to reach [those climate goals] that I'm talking about, we need to focus more tightly on cities, states, and regions for very different solutions in different parts of the country.

Solutions that also address the dislocations — the worker dislocations, the community dislocations. The one talked about mostly has been in coal communities, but it's much more than that. ... If we go to an energy economy that has 90 percent reductions in CO2, that is going to have big changes at the local level. Sometimes very positive; sometimes negative.

So, I think that politically, if we

want to get on a fast pace of reaching long term deep decarbonization, you can't do it unless you're bringing everybody along.

On one hand, I have this big picture — the big technology breakthrough and large-scale carbon management — but you have to also look at it at the local levels, where the challenges and solutions are going to look very different. And we won't win in the end, I'll exaggerate, if innovation happens only in Boston and Silicon Valley. We need that. But we need a lot more distributed [innovation] throughout the country. Those are the kind of solutions that I want to at least help look for.

On Rick Perry and the future of ARPA-E
The Tech: Do you mind talking about the transfer of information between you and the current Secretary of Energy Rick Perry? Is there a transfer of information? What's that like?

Moniz: We've talked a number of times and exchanged communications. I'm not going to go into those communications, but I will say that if you look at his statements in his confirmation hearing and his statements subsequent to becoming Secretary, he has been extremely strong on the importance of the laboratories, of R&D, of science.

Look, he said it in his confirmation hearing, in his opening statement, that he had made some statements in the past about eliminating the department. He said, “Now that I've seen and understood much better what the department does, and the incredible work it does, and on important missions, I was wrong.”

He just said that; so as far as I'm concerned, he did the homework — and some of our conversations may have been part of that — but fundamentally he did the homework, and he came quite correctly to the opposite conclusion.

Now I'll have to be honest, however, that the problem may be the disconnect that seems to be happening between departments — not just the Department of Energy — and agencies like the OMB [Office of Management and Budget].

Secretary Perry quite correctly put out a tweet in early March on the importance of the innovators being supported by ARPA-E [Advanced Research Projects Agency-Energy].

ARPA-E is a tremendously successful program. It's almost the face of innovation at the Department of Energy. There a lot of other stuff going on, but ARPA-E really has a special role. It was created in law in a Republican Congress in 2005. It got implemented when the Recovery Act provided some funding in 2009 to get it going, two hundred million dollars, but it had been established in the 2005 Energy Policy Act.

So Secretary Perry came out with that — right on the money — and then a week later or two weeks later, the OMB puts out this budget with very little detail, but sufficient detail to say we're going to zero out ARPA-E.

Now I don't think the Congress will go will go along with that, because Congress appreciates, I think, ARPA-E. Secretary Perry apparently appreciates ARPA-E. But these mixed signals just have got to get ironed out, because research innovation does not do well in a start-stop environment. You need to have the confidence that you're going to be able to — if you commit yourself to one of these hard problems — that you're going to be able to get through to the end. Maybe it works, maybe it doesn't. But that's what entrepreneurs and researchers do.

Secretary Perry has certainly made very strong statements about that. He's also made strong statements about how he's come to understand the critical role of the department in national security. So now it's a question of execution, and certainly I think OMB needs to be on the same page with the agencies.

Editor's Note: The interview has been edited for clarity and brevity.



Left: *Michael Hiebert from Chappaqua, New York*
What worries you about MIT?
Probably time management. I feel it's gonna be hard to put up with everything.
Is there any particular group you would like to be part of at MIT?
I'm going to play lacrosse and I'm also going to do ROTC. I feel like I'll be busy.
Middle: *Clemente Ocejó Elizondo from Chappaqua, New York*
What are you most excited about at MIT?
The whole experience really. Like best engineering school in the country.
What are you interested in?
Right now I'm Course 6, but I'm pretty open to anything.
Are you really?
Yea, like, a little.
Right: *Tim Zavarella from Chappaqua, New York*
What's your spirit animal?
My spirit animal? Ooh, that's a good one. I'd have to go with the squid.
What are you most nervous about?
People being, like, weird. That's gotta be it.

CPW 2017

Photos by Damian Barabonkov. Interviews by Drew Bent and Marie Patino.



Ian Hokaj from Santiago, Chile
What's your spirit animal?
The sloth.
Why the sloth?
I don't know. It's lazy, it doesn't do anything. I feel kind of compelled to do the sloth. No, just like it's my spirit animal. I don't necessarily embody all of its facets but it's still my spirit animal.

What are you most excited about at MIT?
Personally, just meeting other people is what interests me, academic connections and all. I've met a lot of people, they're like [into] engineering but they're also chill people and I'm excited to meet some of them.



Abena Peasah from Lawrence, Kansas
Are you committed to MIT?
Not yet but it's my top choice.
Is there anything that's going to help you decide this weekend?
I'm hoping to sit in on a class, and then go to a couple other activities with current and prospective students. We'll see how that goes.
Do you know what you'd want to study if you came?
I'm thinking chemistry but honestly that could change. There's just a lot out there.



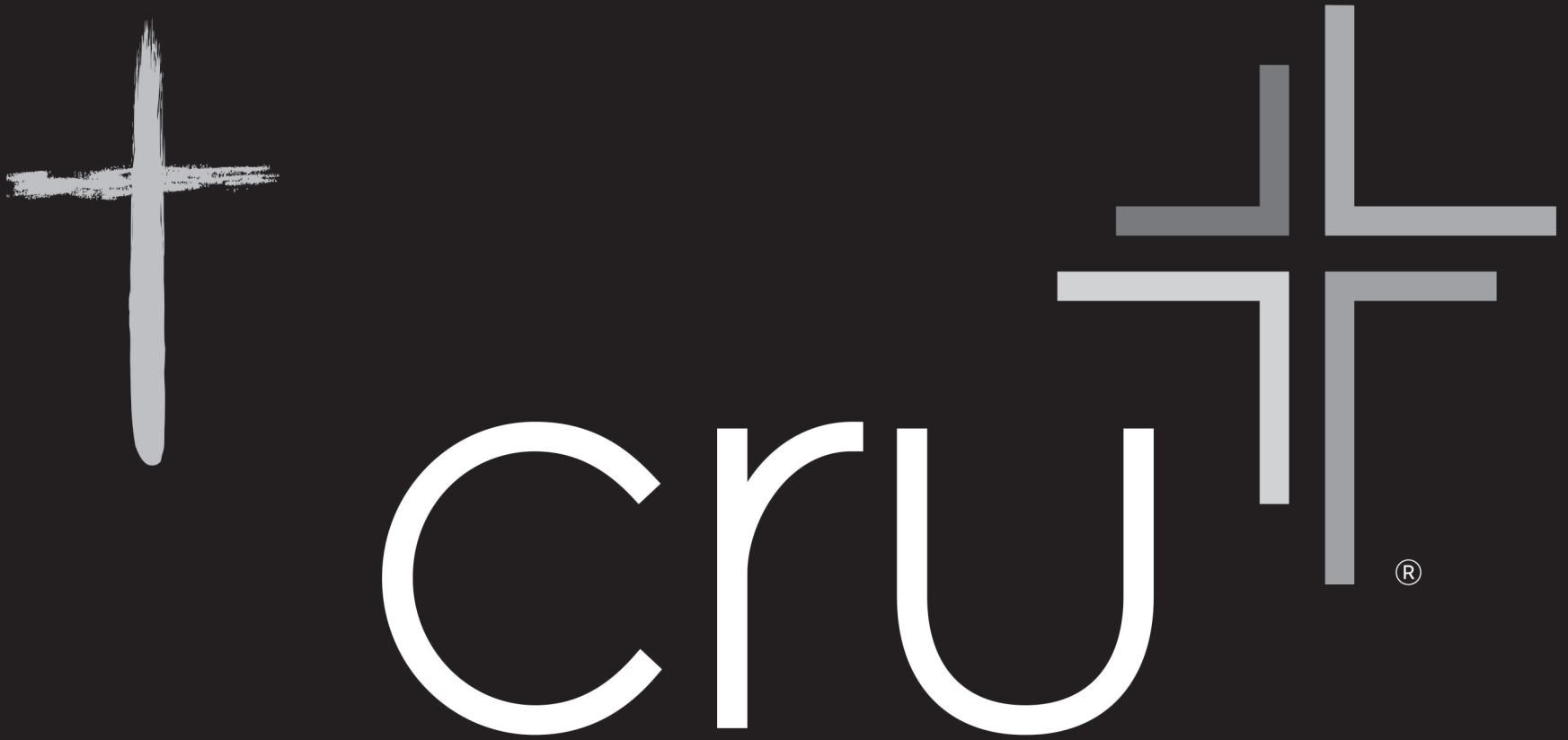
From left to right: *Heu Nguyen, Noam Miller, James Drayton*



Bella Montanaro from Pittsburgh, Pennsylvania
Are you committed?
I am, just about a week ago I did. It's official, you're stuck with me for 4 years.
What are you most excited about?
Meeting people. I came here not knowing a single person, nobody from my school is going [to MIT] or has come in a long time. I was a little bit nervous but everyone has been really great and really nice.



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Larger than Life Games & Chick-fil-A

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SpringFest will cost \$25,000 more than last year, \$55,000 to go to talent

SpringFest, from Page 1

this year’s artists. Petrova said that Timeflies had “similar energy to The Chainsmokers” and seemed like it could keep a variety of audiences engaged. In addition, the band was formed at nearby Tufts University, giving it a connection to the area.

The OneWorld @ MIT Festival will take place the day after the SpringFest concert in the same location, so the UA is working with de-

signer Peter Agoos to create a stage that is suitable for both events.

In addition to the concert, SpringFest will comprise a student talent showcase, which may include student musician performers and other displays of ability, as well as a “Carnival-esque swag study break,” at which free paraphernalia will be handed out to students.

The month will also include a comedy and cheesecake event again, featuring professional sketch and improv troupe the Upright Citizens Brigade and MIT’s

improv comedy group, Roadkill Buffet.

This year, the UA will spend most of the \$125,000 it has budgeted for SpringFest.

\$55,000 of this will go towards the concert talent (\$10,000 for the opener, and \$45,000 for the headliner), compared to \$45,000 out of a total budget of \$100,000 last year. \$25,000 is allocated for the staging, and \$23,000 will be used for MIT’s ticketing service, an entertainment license, metal detectors and security, EMS, and other services.

Sanders calls for Democratic Party to address needs of working class

Sanders, from Page 1

quarter of his talk discussing his previous campaign and legislative successes as well as his policy platforms: he called for free public colleges to loud cheering from the audience.

The senator criticized “blue state, red state business,” or political polarization. Before a mostly white and graying crowd,

Sanders preached the need for the Democratic Party to become a “50-state party” that addresses the concerns of all working class people.

Sanders said he would be introducing legislation in a few weeks to create a single-payer system under Medicare.

The audience chuckled appreciatively at quips the senator sprinkled throughout his talk.

Asked if he could help the audience “make sense of the global rise of the right,” Sanders replied: “Probably not, but I’ll try.”

The event, which highlighted Sanders’ 2016 book *Our Revolution: A Future to Believe In*, was presented by the Harvard Book Store, the Boston Review, and the MIT Department of Political Science.

— Vivian Zhong

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5:00 - 6:30 p.m.
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77 Massachusetts Avenue, Cambridge

Mark DiVincenzo, Esq.
Vice President and General Counsel, MIT

Dan Berger, Esq.
Immigration Attorney, Curran & Berger LLP

Christopher Capozzola
Associate Professor of History, MIT



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Massachusetts Institute of Technology



Entrepreneurship, artificial intelligence and the creation of Toutiao

Yiming Zhang
Weiying Ma

Toutiao is “the insanely popular Chinese news app that you’ve never heard of” according to MIT Technology Review. By analyzing the features of content, users and users interaction with content, the algorithm models of Toutiao generate a tailored news feed for users.



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Solution to Fix It...
from page 5

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Andrew Hall
Podcaster, Comedian, and Blogger at *Laughing in Disbelief* on Patheos

Moshe Hoffman
Evolutionary Dynamics Research Scientist and Lecturer at Harvard

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Special message to MIT ex-believers from Seth Andrews



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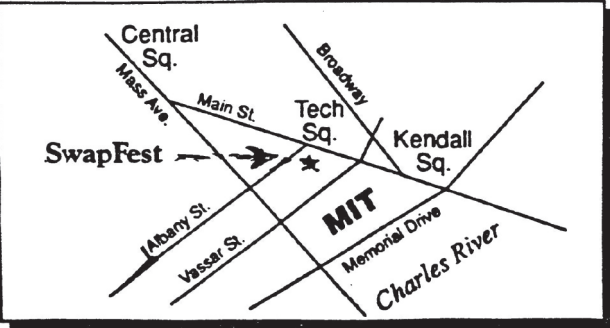
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RESTAURANT REVIEW

Let's taco 'bout tacos

Naco Taco serves up sizeable tacos right up the street on Mass Ave

By Tara Lee
SENIOR EDITOR

I remember when Naco Taco first opened up on Massachusetts Avenue two years ago — the wait time on weekend nights crept up to the hour mark, and everyone was intrigued by the blinking string of lights that looped around the food truck stationed outside the restaurant.

I wasn't a huge fan of the overall value of my Naco Taco experience the first time around, so I recently gave it another shot. A friend and I shared five tacos to sample as much of the taco menu as possible.

The portions were sizeable. The corn tortillas were slightly larger than my hands, and they were piled high enough with filling that made eating them without spilling anything slightly precarious.

First up, we tried the al pastor taco with charbroiled pork, onion, cilantro, and burnt pineapple. I loved this combination of flavors, especially with the fragrant cilantro complementing the sweet touch of pineapple; however, I did find the pork to be a bit dry. The Cochinita Pibil taco included pulled pork, radish, and a cilantro chile crema with grilled green onions on top. This taco had a lot more flavor, and the

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spears of radish added a nice crunch to the texture.

We also tried one of the vegetarian tacos, the smoked tofu taco, which came with salsa arriera, refried beans, and cotija crema on top of a vegetarian tortilla. The tofu was actually just two strips of lightly fried tofu, and I wasn't particularly satisfied with its texture against the salsa and beans.

Lastly, we also tried the lamb taco,



TARA LEE—THE TECH

A variety of tacos from Naco Taco.

which came with carrots, cucumbers, and radish, and the chorizo taco, which came with baby yukon potato, cilantro, onion, and salsa. These two tacos were pleasantly flavorful, but, like the other tacos, nothing

extraordinary stood out.

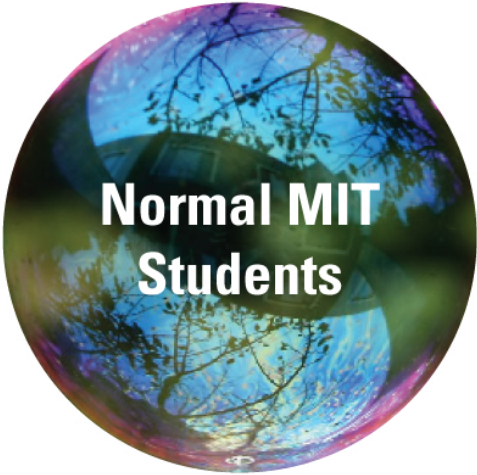
Overall, Naco Taco has definitely upped their portion sizes from the last time I visited, but it's still a bit of a stretch to justify \$4 for a single average taco.



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STARR FORUM



SOFTBALL

MIT softball looking to continue strong play of last season despite dropping NEWMAC opener

By Hannah Gaudet

The MIT softball team is still riding the wave of a successful 2016 season. Assisted by a strong senior class, the Engineers finished fifth overall in the nation. Last season stands as the most successful in program history with a final record of 34-14, 15-3 in the NEWMAC conference.

This season's team is showing signs of a repeat performance. Their strengths lie in diverse pitching staff and talented base runners, including Jasmin Joseph '18 and Devon Goetz '20. MIT entered the season ranked second behind rival WPI in the NEWMAC coaches' poll and 19th in the country. The Engineers started their season with a trip to

Florida, where they played eight games against six teams, taking home a win in every match. The trip marked their first opportunity to see some of the competition in their conference this season.

On Monday, MIT hosted their NEWMAC opener, a double header against Babson College. MIT dropped both games to Babson's strong offense. The pitching staff limited the number of scoring opportunities, but Babson's ability to read the ball and predict the pitches earned them two wins. Babson's record is now 11-7 overall and 3-3 in conference play. MIT, with fewer games played, is 8-2 and 0-2.

Ravenne Nasser '19 started the first game tossing four shut-out innings. In the fifth inning,

Babson got a read for her pitching style and drove in four runs (two earned). Nasser closed out the inning and was replaced by Amber VanHemel '19. VanHemel's rise ball threw off Babson, who had become accustomed to Nasser's low pitching style. Babson only got two hits off VanHemel and struck out twice.

MIT brought a strong energy to the plate to counter Babson's offensive capability. The Engineers struck first, scoring once in the first inning and again in the fourth. Six players put up a total of six hits, keeping a win within sight the whole game. The Engineers held the lead through the fourth and remained optimistic they could take home the win despite falling behind 4-2.

In game two, MIT scored early, putting two runs on the board in the first inning to match Babson's two. Unlike the first game, the energy in the dugout was lacking and Babson outlasted the Engineers at the plate. MIT scored their third run in the fourth inning, while Babson scored at least one run in every inning except the sixth, steadily increasing the margin of victory for a final score of 8-3.

VanHemel was tagged to start the second game to continue her clean execution from the first. Babson learned to read her rise ball quickly, attacking it as it hung as a high fastball in the air. With two runners on base, Deanna Delgado '18 came in as relief. Delgado, a drop and screw-

ball pitcher, recorded 24 strikes for 34 pitches. She tossed two and a third innings, allowing five hits and three runs, two of which were earned. Nasser returned to close out the game, allowing three earned runs and striking out two.

MIT's pitching staff recorded six strikeouts over the two games. Babson had only had two strikeouts recorded against them in the four previous conference games.

MIT travels to face NEWMAC rivals Emerson College and Springfield College Friday and Saturday, respectively. Their next home games are Tuesday against NEWMAC team Clark University at 3 and 5 pm.

Hannah Gaudet is a member of the class of 2019.



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The Tech

SPORTS BLITZ

Men's Baseball (8-4) split their NEWMAC doubleheader against Clark University. The Engineers lost the first game 21-5 but bounced back with a 11-1 second game victory.

Women's Softball (8-2) went 8-0 in their season opening trip to Florida. The Engineers dropped their NEWMAC doubleheader against Babson college losing the first game 4-2 and the second game 8-3.

Men's Lacrosse (5-3)
went 2-1 last week with wins over Emmanuel College and U.S. Coast Guard Academy and a loss to Colorado College.

Women's Lacrosse
(4-5) lost their two games last week against Williams College and Springfield College.

Women's Tennis
(11-3) lost 6-3 in a tight match against Claremont Mudd-Scripps.

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